



BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Optometry
Course Name – Geometrical Optics
Course Code - BOPTO205
(Semester II)

Time allotted : 1 Hrs.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

- (1) Focal length of plane mirror is

a) at infinity	b) zero
c) negative	d) none of these
- (2) Image formed by plane mirror is

a) real and erect	b) real and inverted
c) virtual and erect	d) virtual and inverted
- (3) A concave mirror gives real, inverted and same size image if the object is placed

a) at F	b) at infinity
c) at C	d) beyond C
- (4) Power of the lens is -40, its focal length is

a) 4m	b) -40m
c) -25m	d) -20m
- (5) In optics an object which has higher refractive index is called

a) optically rarer	b) optical denser
c) optical density	d) refractive index
- (6) The optical phenomena, twinkling of stars, is due to

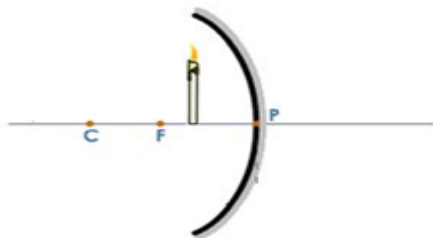
a) atmospheric reflection	b) total reflection
c) atmospheric refraction	d) total refraction
- (7) The radius of curvature of a mirror is 20cm the focal length is

a) 20 cm	b) 10 cm
c) 40 cm	d) 5 cm

- (45) The mirror used for the head light of a car is
- spherical concave
 - plane
 - cylindrical
 - parabolic concave
- (46) The human eye is like a camera and hence it contains a system of lens. The eye lens forms
- a straight or upright, real image of the object on the retina
 - an inverted, virtual image of the object on the retina
 - an inverted, real image of the object on the retina
 - a straight or upright, real image of the object on the iris
- (47) An object is placed at the focus of a concave mirror. The image will be
- real, inverted, same size at the focus
 - real, upright, same size at the focus
 - virtual, inverted, highly enlarged at infinity
 - real, inverted, highly enlarged at infinity
- (48) How far must an object be from a concave mirror if the image formed is to be inverted?
- less than its focal length
 - exactly at its focal length
 - more than its focal length
 - none of the above
- (49) The head mirror used by E.N.T doctors is
- concave
 - convex
 - plane
 - plano-convex
- (50) What would be the number of images formed of an object in two mirrors placed at right angles to each other?
- 2
 - 3
 - 4
 - 6
- (51) An object is placed at a distance of 12 cm from a convex lens on its principal axis and a virtual image of certain size is formed. If the object is moved further 8 cm away from the lens, a real image of the same size as that of the virtual image is formed . Which one of the following is the focal length of the lens?
- 15 cm
 - 16 cm
 - 18 cm
 - 20 cm
- (52) The visible light has a wavelength range from about 380 nm (violet) to 780 nm (red). If an excited object emits light with wavelength of 15 nm, to which one of the following ranges does it belong?
- X-ray
 - gamma ray
 - infrared
 - ultraviolet
- (53) In vacuum, the speed of light
- depends on its wavelength
 - depends on its frequency
 - depends on its intensity
 - neither depends on its wavelength, frequency nor intensity

(54)

A candle is placed in front of a concave mirror. The image produced by the mirror is



- real, inverted and magnified
- real, inverted and demagnified

- c) virtual, upright and magnified d) virtual, upright and demagnified
- (55) By which optical phenomenon does the splitting of white light into seven constituent colours occur?
- a) refraction b) reflection
c) dispersion d) interference
- (56) Which is the complimentary colour of blue?
- a) red b) yellow
c) green d) magenta
- (57) Which phenomenon does not play role in the formation of rainbow?
- a) reflection b) refraction
c) dispersion d) absorption
- (58) For which of the following cases will the total internal reflection of light be possible?
- a) angle of incidence is less than the critical angle b) angle of incidence is equal to the critical angle
c) angle of incidence is greater than the critical angle d) angle of incidence is equal to the angle of refraction
- (59) To an astronaut in space, the sky will appear to be
- a) violet b) blue
c) red d) black
- (60) Rainbow formation is due to
- a) absorption of sunlight by water droplets b) diffusion of sunlight through water droplets
c) ionisation of water droplets d) refraction and reflection of sunlight by water droplets